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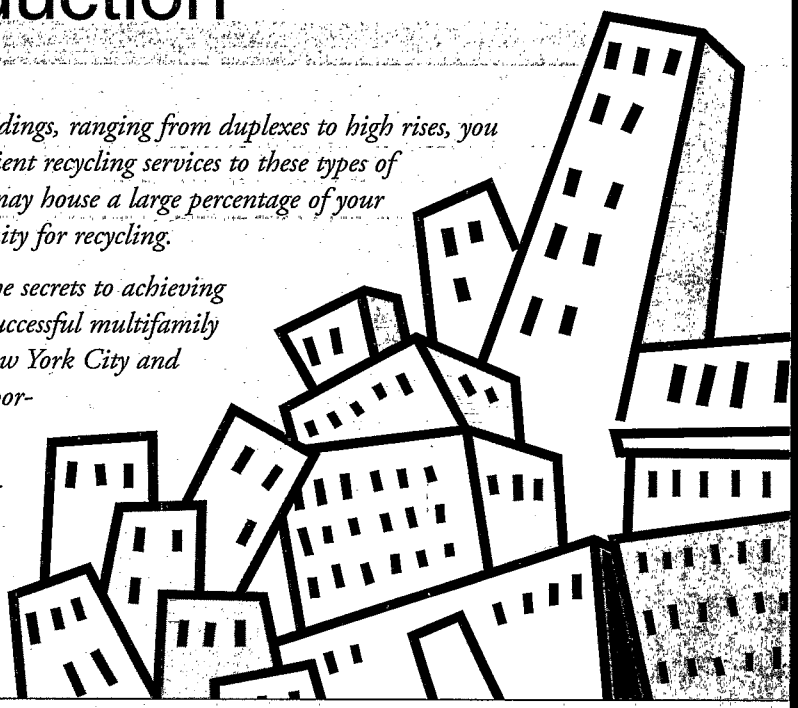
EPA

Multifamily Recycling
A Golden Opportunity for Solid Waste Reduction



If your community has a number of multifamily buildings, ranging from duplexes to high rises, you might be aware that providing cost-effective, convenient recycling services to these types of residences can be a challenge. Since these structures may house a large percentage of your population, however, they provide a golden opportunity for recycling.

How are communities meeting this challenge? What are the secrets to achieving high diversion rates with an efficient use of resources? With successful multifamily recycling programs operating in communities as diverse as New York City and Maple Grove, Minnesota, there now are answers to these important questions.

This fact sheet explains the diversion rates, costs, and common elements of high performing multifamily recycling programs across the United States, based on the experience of communities like your own. This information is drawn from the results of a national study that compared single family and multifamily recycling services.

Measures for Success

How do you measure the success of a multifamily recycling program? As with all recycling collection efforts, most people would agree that a good multifamily program is one that diverts large volumes of material at low costs. For the purposes of this study, those programs with a diversion rate of more than 20 percent (11 of the 40 sample communities) are considered high performers. Of the remaining communities studied, 16 have diversion rates between 10 and 20 percent, and 13 programs registered below 10 percent.

Diversion

Multifamily recycling can help divert significant quantities of materials from the solid waste stream. The curbside diversion rate[1] for the multifamily programs studied was nearly as high as that of single families, averaging 14.6 percent compared to 16.0 percent for single family households. Each multifamily household examined in this study set out an average of 0.14 tons of recyclable materials per year. This compares to 0.23 tons per single family household per year. If recycling was made available to all of the 13.2 million multifamily housing units throughout the United States, at least 847,000 additional tons of materials could be diverted from disposal facilities nationwide. An added benefit is that as more materials are diverted from the waste stream, the amount of trash generated drops. In addition, as diversion increases, the *entire discard stream* is reduced, possibly due to increased waste prevention on the part of households participating in recycling.

Costs

As with any other service, recycling programs present a cost for communities. The study showed that the more a community recycles, however, the more cost-efficient recycling programs become. The average (net) cost[2] per ton to collect recyclables

from multifamily households is $177; however, this figure drops to $113 for communities with diversion rates over 20 percent—a decrease of 36 percent. Single family counterparts average $127 per ton of recyclables; the cost decreases to $82 in high diversion communities. (This does not include the cost of yard trimmings collection.) The study showed a strong correlation between single family and multifamily diversion rates, implying that a community with one successful recycling program is likely to have other successful programs as well.

An additional finding of the study was that for communities with high diversion in single family households, recycling costs less per ton than refuse collection.

In communities with high diversion recycling programs, the cost to pick up trash from multifamily dwellings also is lower than for single family homes.

Successful Program Profile

The way you design your collection system can have a significant impact on the success of your multifamily recycling program. Most of the successful communities in the study share similar strategies. You might consider some of their approaches when designing your own program.

Containers

- Equipping buildings with 90-gallon carts typically provides enough room to store the collected recyclables, allows for mobility on site, takes up minimal space at the complex, and allows service by semi-automatic side loaders.
- Providing at least 3 containers per set-out allows for adequate sorting and discourages contamination. You might, for example, provide containers for newspapers, old corrugated cardboard (OCC), and other "mixed" recyclables (e.g., glass, metal containers).
- Furnishing a set of recycling containers for each group of 15 to 19 households makes recycling containers easily accessible to all residents and encourages participation in the program.

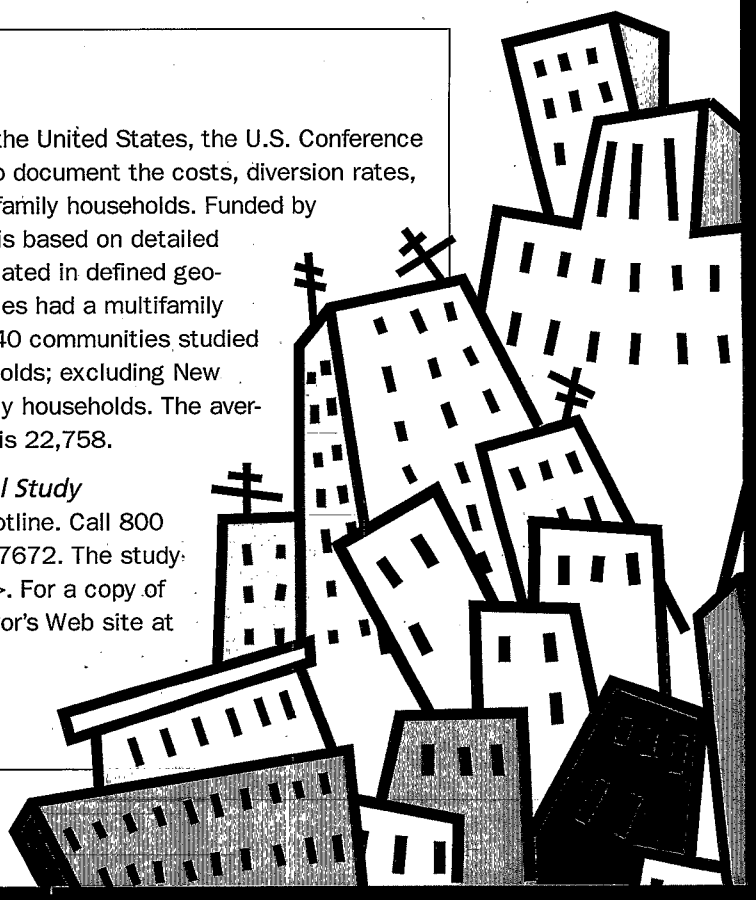
Collection

- According to this study, most high performing communities rely on a private firm to collect recyclables.
- Programs with high diversion rates are likely to charge each multifamily unit a monthly flat fee of $2 or more for collection of recyclables. In addition, high performing programs are more likely to have variable fee systems for multifamily garbage—a sys-

Breaking New Ground

To determine the effectiveness of multifamily efforts in the United States, the U.S. Conference of Mayors and ECODATA, Inc. conducted a national study to document the costs, diversion rates, and program characteristics of recycling programs in multifamily households. Funded by the U.S. Environmental Protection Agency (EPA), the study is based on detailed information obtained from a sample of 40 communities located in defined geographic sectors in the United States. All sample communities had a multifamily recycling program in place for at least 1 year. In total, the 40 communities studied provide recycling services to 3.9 million multifamily households; excluding New York City, the 39 remaining cities serve 887,558 multifamily households. The average number of multifamily units served by these 39 cities is 22,758.

A copy of the study, *Multifamily Recycling: A National Study* (EPA530-R-99-011) can be ordered through EPA's RCRA Hotline. Call 800 424-9346, or for the hearing impaired, call TDD 800 553-7672. The study also is available on EPA's Web site at <www.epa.gov/osw>. For a copy of the *Executive Summary*, visit the U.S. Conference of Mayor's Web site at <www.usmayors.org>.



tem that allows building owners to reduce their fees as the volume of discards is diverted from refuse to recycling.

- The more materials you collect, the higher your potential recycling rate. Most programs include at least the "standard" list of newspapers, aluminum and steel cans, high-density polyethylene (HDPE) and polyethylene terephthalate (PET) plastics, and glass.
- High performing programs, which collect an average of 10 materials, also include recyclables such as magazines, phone books, mixed waste paper, OCC, and other plastics.

Ensuring Success

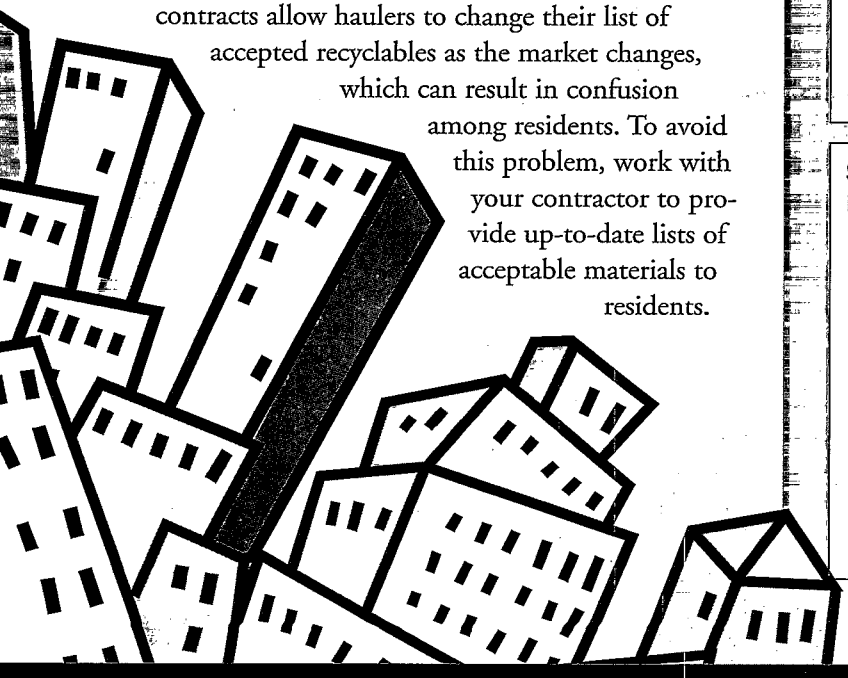
Even successful programs can face hurdles during implementation. Low participation is the most common obstacle, but some communities have experienced others as well. High performing communities recommend the following ways to minimize these problems before they develop:

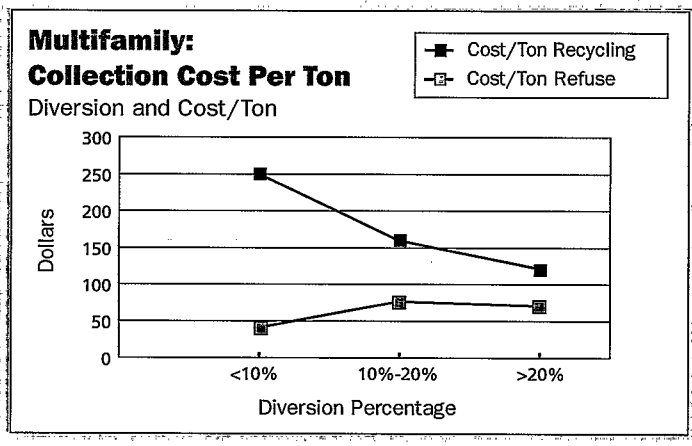
Increase Participation

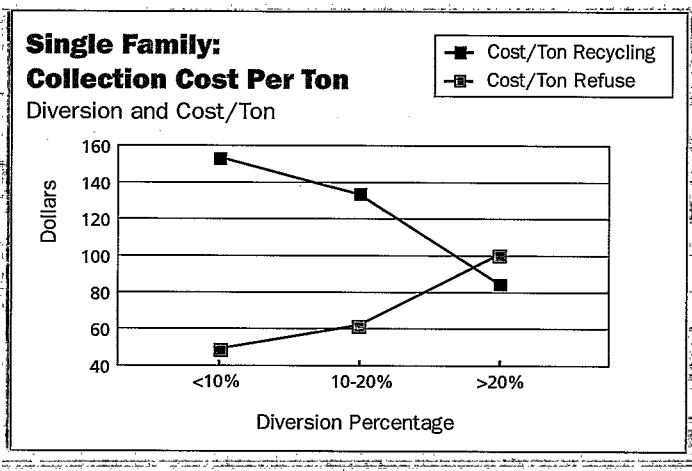
- Consider a mandatory program. Of the highest performing programs, 90 percent rely on mandatory participation.
- Some programs use fines, liens, or other sanctions against complexes that violate local regulations.

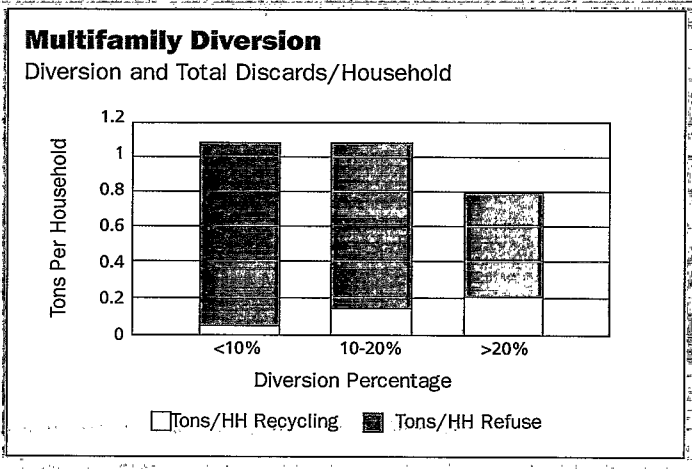
Establish Contract Provisions

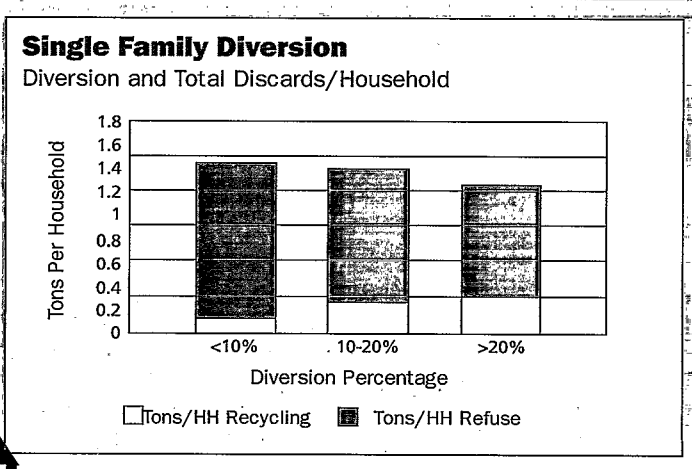
- For communities that use private haulers, in some cases contracts allow haulers to change their list of accepted recyclables as the market changes, which can result in confusion among residents. To avoid this problem, work with your contractor to provide up-to-date lists of acceptable materials to residents.











- Most programs also establish clear reporting requirements if they use contracts, so they can monitor the number of tons collected, containers emptied, and households served.

Prevent Contamination

- Inspecting collection bins, identifying the responsible households, and contacting individuals to explain the recycling program can help prevent or correct contamination problems.
- Clearly labeled containers allow residents to easily sort recyclable materials.

Educate Managers and Residents

- High performing communities conduct targeted outreach to their customers via frequent mailings or personal visits, providing information to individual building managers and residents.
- High performing communities provide a program representative to give technical assistance on site, on an as-needed basis.

Moving Recycling into the Future

A multifamily recycling program can help you provide an important service to households in your community. It also can help ensure that policy objectives, like meeting a state recycling goal, are met. Multifamily recycling can advance your city, as well as the nation, in reducing reliance on disposal facilities, preventing pollution, and conserving natural resources.

As this study shows, a number of communities have set up efficient, cost-effective recycling programs for their multifamily buildings. Learning from these successes can help you achieve similar results in your own community.

Detailed Recordkeeping

Communities that know where containers have been distributed and how often they are emptied are better able to target promotions, educational efforts, and other outreach activities that encourage participation. Keeping track of performance in a multifamily collection program is also a key step toward progress. High performing programs quantify the following:

- Set-outs
- Containers distributed
- Households in complexes receiving service
- Complaints registered
- Service violation notices issued
- Quantity of materials collected (both garbage and recyclables)

Cost Measures[2] and Multifamily Diversion Rates

	Multifamily Curbside Diversion		
	<10%	10-20%	>20%
Collection Cost/Ton			
Multifamily Recycling	$251.00	$159.00	$113.00
Multifamily Garbage	$43.13	$72.60	$66.39
Single Family Recycling*	$151.80	$131.70	$81.64
Single Family Garbage*	$47.48	$60.28	$101.32
Collection Cost/Household/Year			
Multifamily Recycling	$16.63	$20.56	$21.81
Multifamily Garbage	$45.17	$72.34	$36.01
Single Family Recycling*	$21.65	$30.96	$24.73
Single Family Garbage*	$58.69	$64.71	$84.01
Tons/Household/Year			
Multifamily Recycling	0.061	0.145	0.211
Multifamily Garbage	1.023	0.934	0.595
Single Family Recycling*	0.139	0.260	0.297
Single Family Garbage*	1.312	1.123	0.951

*Does not include cost of yard trimmings.

[1] Diversion rate is the ratio of tons of recyclables per household, for households in the multifamily recycling program, divided by the sum of tons of garbage per household, for all multifamily households, plus tons of recyclables per household, for households in the multifamily recycling program.

[2] Cost of service is the actual cost of municipal service, or the payment to a private firm that provides service. Cost of disposal (e.g., landfill tip fee) is not included in garbage costs. Any revenue from the sale of recyclables that is remitted to the city is subtracted from the cost of recyclables. Thus, no profit is included for municipal service, whereas the payment to private haulers includes any profit they might earn.